

Appl. No. 09/631,339
Reply to Final Office Action of June 22, 2006

IN THE CLAIMS

This listing of claims replaces all prior versions and listings of the claims in this application:

1. (Currently Amended) A container for holding a fluidic biological sample while undergoing nucleic acid amplification, the container consisting of:
a receiving portion having a first volume, the receiving portion being adapted to receive the biological sample therein; and

a reaction portion consisting of a capillary tube that is closed at one end, has an inner diameter selected from the range of about 0.25 mm to about 1.0 mm, wherein the and a capillary tube wall is about 0.1 mm thick, and the said reaction portion being in fluidic communication with the receiving portion such that the biological sample placed in the receiving portion can travel to the reaction portion, the reaction portion having an internal volume not greater than a second volume, the second volume being less than the first volume and not greater than 1 milliliter, said reaction portion comprised of material having a thermal conductivity in the range from about 20 to about 35 in accordance with the formula:

$$\left(\frac{\text{cal cm}}{\text{cm}^2 \text{ s degree C}} \right) \times 10^4.$$

2. (Previously Presented) A container as defined in claim 1 wherein the receiver portion is formed from a plastic material.

3. (Previously Presented) A container as defined in claim 2 wherein the receiver portion is in the shape of a funnel structure.

4. (Currently Amended) A container for holding a fluidic biological sample while undergoing nucleic acid amplification, the container consisting of:

a receiving portion having a first volume, the receiving portion being adapted to receive the biological sample therein;

a reaction portion consisting of a capillary tube that is closed at one end, said closed end formed as a flat tip, wherein the capillary tube wall is about 0.1 mm thick, said reaction portion being in fluidic communication with the receiving portion such that the biological sample placed in the receiving portion can travel to the reaction portion, the

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reaction portion having an internal volume not greater than a second volume, the second volume being less than the first volume and not greater than 1 milliliter, said reaction portion comprised of material having a thermal conductivity in the range from about 20 to about 35

in accordance with the formula: $\left(\frac{\text{cal cm}}{\text{cm}^2 \text{s degree C}} \right) \times 10^4$; and

a stopper, the stopper being removably inserted into the receiving portion.

5. (Previously presented) A container as defined in claim 1 wherein the capillary tube is a glass capillary tube having an inner diameter of about 0.8 mm and an outer diameter of about 1.0 mm and the second volume is not greater than about 10 μL .

6. (Original) A container as defined in claim 1 wherein at least a portion of the reaction portion is transparent.

7 and 8. (Canceled).

9. (Previously Presented) The container of claim 1 wherein the second volume is between about .01 μL to about 100 μL .

10. (Previously Presented) The container of claim 1 wherein the reaction portion comprises a glass capillary tube having a 0.8 mm inner diameter and a 1.0 mm outer diameter.

11. (Previously Presented) The container of claim 10 wherein the receiving portion is in the shape of a funnel and the capillary tube comprises a closed first end and a flared second end, the flared second end for receiving the funnel shaped portion of the receiving portion.

12. (Currently Amended) The container of claim ~~10~~11 wherein the closed first end comprises a flat tip.

13 and 14. (Canceled)

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15. (Previously Presented) The container of claim 1 wherein the reaction portion has a volume to surface ratio of less than 0.25 mm.

16-18. (Cancelled).

19. (Previously presented) The container of claim 1 wherein the capillary tube has an inner diameter in the range from about 0.02 mm to about 0.1 mm.

20. (Previously presented) The container of claim 1 wherein the closed end is formed to optimize optical transmissibility for light having a wavelength of about 400 nm to about 800 nm.

21 and 22. (Canceled)

23. (Currently Amended) A container for rapidly heating and cooling a fluidic biological sample contained therein, the container consisting of:

a receiving portion defining a first internal volume, the receiving portion being adapted to receive the biological sample therein;

a reaction portion, consisting of a thin walled capillary tube that is closed at one end, and has an inner diameter selected from the range of about 0.25 mm to about 1.0 mm, wherein the closed end is formed for optical transmissibility through the closed end, and the capillary tube wall is about 0.1 mm thick or less, said reaction portion being in fluidic communication with the receiving portion such that the biological sample placed in the receiving portion can travel to the reaction portion, the reaction portion having an internal volume not greater than a second volume, the second volume being less than the first volume and not greater than 100 μ l.

24. (Currently Amended) The container of claim ~~21~~ 23 wherein the capillary tube wall is about 0.1 mm thick..

25. (New) A container as defined in claim 12 wherein the capillary tube has a length of about 80 mm.